For Discussion Only
DRAFT Maine Grade Level Expectations (October 1, 2003)
Cluster 1 Numbers and Operations Cluster

Standard	Grade 3	Grade 4	Grade 5
A. Number and Number Sense Students can	M1A.3.1 Compare numbers using <, >, and = and order numbers up to 1000. M1A.3.2 Classify numbers as odd and even for numbers up to 1000.	M1A.4.1 Read, compare, order, classify, and explain whole numbers up to one million. M1A.4.2 Read, compare, order, classify, and explain simple fractions through tenths.	M1A.5.1 Compare, order, use, and represent simple fractions (halves, fourths, fifths, and tenths with all numerators) and decimals to hundredths. M1A.5.2 Use divisibility rules for 2, 5 and 10.
B. Computation (no calculator use for straight computation) Numbers used in this section should match those listed for Standard A. Students can	M1B.3.1 Solve single and multi-step, real-life problems using addition and subtraction with whole numbers with no number larger than 1000 and do straight computation with these numbers and operations.	M1B.4.1 Solve multi-step, real-life problems using the four operations with whole numbers. M1B.4.2 Solve real-life problems involving addition and subtraction of simple fractions. M1B.4.3 Develop proficiency with the facts and algorithms of the four operations on whole numbers using mental math and a variety of materials, strategies, and technologies.	M1B.5.1 Solve single and multi-step, real-life problems using addition, subtraction, multiplication and division (1-digit divisor, 3-digit dividend) of whole numbers and addition and subtraction with simple fractions with common denominators and decimals to hundredths, and do straight computation with these numbers and operations.

Content Standard I. Discrete Mathematics: There is considerable overlap with other areas and other aspects are more appropriately assessed locally. No Grade Level Expectations.

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DRAFT Maine Grade Level Expectations (October 1, 2003)
Cluster 1 Numbers and Operations Cluster

Grade 6	Grade 7	Grade 8
M1A.6.1 Compare, order, use and represent fractions, (halves, thirds, fourths, fifths, sixths, eighths and tenths with all numerators); and compare, order, use and represent decimals to thousandths and convert between decimals and percentages. M1A.6.2 Recognize and apply concepts of prime and composite numbers and use divisibility rules for 2, 3, 4, 5, 6, 9 and 10. M1A6.3 Recognize and find factors and multiples of natural numbers.	M1A.7.1 Compare, order, use, and represent fractions, decimals, and percents and convert among different numeral forms (limited to terminating decimals for decimal to fraction conversion). M1A.7.2 Recognize and apply concepts of positive exponents, ratios, integers, and absolute value.	M1A.8 Use numbers in a variety of equivalent and interchangeable forms (e.g., integer, fraction, decimal, percent, exponential, and scientific notation) in problem-solving. M1A.8.2 Apply concepts of ratios, proportions, percents, and number theory (e.g. primes, factors, and multiples) in practical and other mathematical situations.
M1B.6.1 Solve single and multi-step, real-life problems using the four operations with whole numbers, common fractions and decimals to thousandths, and do straight computation with these numbers and operations. Division limited to 2-digit whole number divisors and 3-digit dividends.	M1B.7.1 Solve single and multi-step, real-life problems using the four operations with whole numbers, fractions (including mixed numerals), decimals, and percents applying order of operations and do straight computation with these numbers and operations.	M1B.8.1 Compute and model all four operations with whole numbers, fractions, decimals, sets of numbers, and percents, applying the proper order of operations. M1B.8.2 Create, solve, and justify the solution for multi-step, real-life problems including those with ratio and proportion.

Content Standard I. Discrete Mathematics: There is considerable overlap with other areas and other aspects are more appropriately assessed locally. No Grade Level Expectations.

For Discussion Only
DRAFT Maine Grade Level Expectations (October 1, 2003)
Shape and Size Cluster

Standard	Grade 3	Grade 4	Grade 5
E. Geometry Students can	M2E.3.1 Use properties/ attributes limited to number of sides, number of angles, to identify, describe, and distinguish between triangles and rectangles and lengths of sides to identify squares as special rectangles. M2E.3.2 Identify a line of symmetry for a given shape or answer questions about figures based on lines of symmetry, e.g. "which of the following shapes have one or more lines of symmetry?"	M2E.4.1 Describe, model, and classify shapes and figures using applicable properties. M2E4.2. Experiment with shapes and figures to make generalizations regarding congruency, symmetry, and similarity. M2E4.3 Use transformations such as slides, flips, and rotations.	M2E.5.1 Use properties/ attributes limited to number of sides, number of angles, and length of sides, and lines of symmetry, to classify polygons. M2E.5.2 Plot non-negative values as points on a number line.
F. Measurement Students can	M2F.3.1 Solve and justify solutions to real-life problems involving the measurement of time, length, and temperature. M2F.3.2 Select appropriate tools and units to measure length, time, and temperature. M2F.3.3 Use a rule* to measure length to the nearest inch and whole centimeter. **Ruler on grade 3,4&5 tests*	M2F.4.1 Solve and justify solutions to real-life problems involving the measurement of time, length, area, perimeter, weight, temperature, mass, capacity, and volume. M2F.4.2 - Select measuring tools and units of measurement that are appropriate for what is being measured.	M2F.5.1 Use ruler to measure length to the nearest quarter inch and centimeter. M2F.5.2 Find area and perimeter of rectangles with whole numbers (includes formula use) with correct units. *Formula sheets as appropriate in all grades*.

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Shape and Size Cluster

Grade 6	Grade 7	Grade 8
M2E.6.1 Use properties/ attributes limited to number of sides, number of angles, and length of sides, lines of symmetry, parallel sides, perpendicular sides, and angles relative to 90° to classify polygons; and to compare and classify rectangular prisms, including cubes; and triangular prisms. M2E.6.2 Use ordered pairs as coordinates of points in the first quadrant of a coordinate plane.	M2E.7.1 Use properties/ attributes limited to number of vertices, number of edges, number of faces, shapes of faces, and types of angles to identify and distinguish among 3 dimensional shapes. M2E.7.2 Use a coordinate system to define and locate position.	M2E.8.2 Apply geometric properties to represent and solve real-life problems involving regular and irregular shapes.
M2F.6.1 Solve problems using elapsed time, thermometers, and scales. M2F.6.2 Compute the area and perimeter of triangles and rectangles with whole numbers (formula use), and find the volume of rectangular solids using pictures of blocks or gridded diagram with correct units.	M2F.7.1 Perform conversions between pairs within the following groups: inches, feet, yards, and miles; millimeters, centimeters, meters, and kilometers; cups, pints, quarts, and gallons; milliliters and liters; ounces, pounds and tons; grams and kilograms; seconds, minutes, hours, days, weeks, months, and years. M2F.7.2 Given formulas from which to choose, find areas and perimeters of 2-D shapes (includes circles), and volumes of rectangular solids with rational numbers with correct units.	M2F.8.1 Develop and use concepts that can be measured directly, or indirectly (e.g., the concept of rate). M2F.8.2 Demonstrate an understanding of length, area, volume, and the corresponding units, square units, and cubic units of measure.

For Discussion Only
DRAFT Maine Grade Level Expectations (October 1, 2003)
Mathematical Decision Making Cluster

Standard	Grade 3	Grade 4	Grade 5
C. Data Analysis and Statistics Students can	M3C.3.1 Read and interpret displays of data: line plots, tables, tally charts, and bar graphs. Identify least frequent, most frequent (mode*), read, use and compare values. *not responsible for this vocabulary word	M3C.4.1 Make generalizations and draw conclusions using various types of graphs, charts, and tables. M3C.4.2 Read and interpret displays of data.	M3C.5.1 Organize data to find mode, median and range of a set of values.
D. Probability In the following GLEs it is expected that students use area and set models. Students can	M3D.3.1 Recognize and describe the likelihood of the occurrence of an event using "likely", "not likely" or "equally likely."	M3D.4.1 Estimate probability from a sample of observed outcomes and simulations.	M3D.5.1 Find the probabilities of simple events and represent them as fractions (1/2, 1/3, 2/3, 1/4, 2/4, 3/4 eligible).

Content Standard J. Mathematical Reasoning: The time demand and cognitive demand of these indicators make them inappropriate for large-scale assessment. No Grade Level Expectations.

For Discussion Only
DRAFT Maine Grade Level Expectations (October 1, 2003)
Mathematical Decision Making Cluster

Grade 6	Grade 7	Grade 8
M3C.6.1 Organize data to find modes, medians, means and ranges for sets of data and displays: Data displays include frequency distributions, tables, line plots, or bar graphs. (e.g., given a bar graph, determine the mode, median, range and mean.)	M3C.7.1 Organize data and analyze patterns and trends in data using modes, medians, means and ranges for sets of data (emphasis on comparing sets begins). Data displays include lists, tables, frequency distributions, line plots, bar graphs or stem and leaf plots.	M3C.8.1 1. Organize and analyze data using mean, median, mode, and range.
M3D.6.1 Find the probabilities of simple events (sample space number and number of desired outcomes given) and represent them as fractions (simplest form not needed). M3D.6.2 Find the number of arrangements of 3 factors with no more than 4 choices per factor (e.g., tree diagram, organized list, pictures).	M3D.7.1 Find the probability of an event and express the probability as a fraction and a percentage (percentages limited to multiples of 10% and 25%). M3D.7.2 Apply the idea of permutation in a problem situation with 6 elements or fewer (e.g., how many ways can the four letters in the word "math" be arranged?).	M3D.8.1 Find the probability of simple events and make predictions by applying the theories of probability. M3D.8.2 Find all possible combinations and arrangements involving a limited number of variables.

Content Standard J. Mathematical Reasoning: The time demand and cognitive demand of these indicators make them inappropriate for large-scale assessment. No Grade Level Expectations.

For Discussion Only
DRAFT Maine Grade Level Expectations (October 1, 2003)
Patterns Cluster

Standard	Grade 3	Grade 4	Grade 5
G. Patterns, Relations, and Functions Students can	M4G.3.1 Determine the next term or missing terms in a numeric or shape pattern. M4G.3.2 Translate real-life situations into addition and subtraction sentences.	M4G.4.1 Use the patterns of numbers, geometry, and a variety of graphs to solve a problem. M4G.4.2 Use variables and open sentences to express relationships.	M4G.5.1 Solve problems involving linear patterns in tables, graphs, words or rules using whole numbers. M4G.5.2 Translate real-life situations into addition, subtraction, multiplication, or division sentences.
H. Algebra Concepts Students can	M4H.3.1 Solve for a missing number or symbol in addition and subtraction sentences using whole numbers.	M4H.4.1 Develop and evaluate simple formulas in problem-solving contexts. M4H.4.2 Find replacements for variables that make simple number sentences true.	M4H.5.1 Solve one-step equations using addition, subtraction, or multiplication with a variable. Values are limited to whole numbers.

Content Standard K. Communication: Due to heavy time load for creating graphs and convincing arguments and the duplication of the use of algebraic notation, there are no Grade Level Expectations for this standard.

For Discussion Only
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Patterns Cluster

Grade 6	Grade 7	Grade 8
M4G.6.1 Solve problems involving linear patterns in the form of tables, graphs, words, rules and equations using whole numbers, decimals to hundredths and simple fractions. M4G.6.2 Translate real-life situations into addition, subtraction, multiplication, and division sentences with whole numbers (mix of operations included).	M4G.71 Solve problems involving linear patterns in the form of tables, graphs, words, rules or equations using rational numbers (including signed values). M4G.7.2 Translate real-life linear situations into equations (limited to one step).	M4G.8. 1. Describe and represent relationships with tables, graphs, and equations. M4G.8.2 Use patterns and multiple representations to solve problems.
M4H.6.1 Solve one-step equations using whole numbers with all four operations.	M4H.7.1 Solve two-step equations using integers and positive rational numbers.	M4H.8.1 Find solutions for unknown quantities in linear equations and in simple equations and inequalities. M4H.8.2 Analyze tables and graphs to identify properties and relationships in a practical context.

Content Standard K. Communication: Due to heavy time load for creating graphs and convincing arguments and the duplication of the use of algebraic notation, there are no Grade Level Expectations for this standard.